

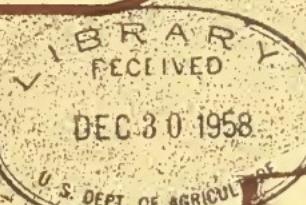
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BIN SITE

Safety

A449.15
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1958



UNITED STATES DEPARTMENT OF AGRICULTURE

COMMODITY STABILIZATION SERVICE • WASHINGTON, D. C.



A Message to CCC Bin-site
Supervisors and Employees

Dear Fellow Workers:

I wish I could talk in person with each of you to express my appreciation of the splendid work you have been doing in seeing that reserve grains acquired by the Commodity Credit Corporation are properly stored and are maintained in good condition. Obviously this is impossible so I am using this method to say, thanks very much for a fine job. Your efforts are important to the Nation and your devotion to duty is appreciated.

I sincerely regret to say that many bin-site workers are being injured on the job. An average of over one and one-half accidents per work day has brought death or suffering to the employees involved and hardships to their families. Of course injured employees who are payrolled by the ASC county offices are eligible for benefits provided by the Federal Em-

ployees' Compensation Act. However, these benefits are small compensation for the suffering, anxiety, inconvenience, and reduction of income caused by a serious accident. Many employees have been permanently disabled while

This pamphlet has been help prevent bin-site accidents. It outlines a few carefu study of the most common accidents. It outlines a few and lists precautions to be taken by employees. Bin-site supervisor is responsible for seeing that such preventions are carried out. Remember, no job is so important that it cannot be spared to plan an

Perhaps you have noticed at your bin site and have changed or built a piece of special equipment which may be a hazard. If so, please tell your supervisor about it and he will forward the information to the Safety Officer in Washington. The good safety record of the Safety Officer in Washington is due to the fact that all bin-site supervisors.

I promise that we will do our best to provide safe and adequate working conditions for all personnel. The rest is up to the employee becomes safety conscious in his daily work, our accident record will improve. I know I can depend upon

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Forget the Tigers

Ever been bit by a tiger? Know anyone who's ever been bit by a tiger? Probably not. We don't have very many tigers in this country. What few we have, we keep locked up behind bars.

Second question: Ever been bit by a dog? Know anyone who's ever been bit by a dog? The answer is probably yes. Dogs run around loose by the million. Everyone—almost—has met a not-so-tame dog who has taken a taste.

Whether we're talking about animals or accidents, it's the same thing—the most dangerous ones aren't necessarily the ones that give us the most trouble.

It's not the "tigers"—the high-hazard machines and materials—that necessarily cause the most accidents. It's the "dogs"—the familiar, the half tame, the commonplace jobs—that most frequently bite the people who do them.

In planning safety work at your bin site, Mr. Supervisor, please remember that more people have the bite put on 'em by dogs than by tigers!



AUGER TYPE GRAIN ELEVATORS

Most of the serious accidents at bin sites involve grain augers or falls. The auger accidents occur frequently and usually result in the loss of one or more fingers or toes in addition to broken bones, bruises, and cuts. Prevention of auger accidents deserves special attention by all bin site employees and supervisors.

Most auger accidents are of the following types:

1. The open receiving end of the auger catches the hand, foot or clothing of the employee, usually while the receiving port is covered with grain.
2. The auger begins to tip and the employee grabs to hold it in position thus catching his hand or foot in a moving part. The tipping often occurs just after

the hopper or bin has been emptied and the upper end of the auger tube is still full of grain.

3. The moving V-belts, pulleys, or motor shafts engage the employee's hands or clothing.

CASE HISTORIES

Lincoln County, Kans.—Employee was unloading wheat out of truck when his foot slipped into the moving auger. His foot was badly mangled and he was disabled for many weeks.

Tama County, Iowa.—Employee reached down to bin outlet for sample of grain and lost his balance, catching his hand in moving auger. Six tendons of the right hand were severed and two bones fractured. At last report this employee had been off work for 3 months.



A man in a doorway, struggling with a piano, was glad of the offer of assistance from a passerby. A fresh struggle ensued, and after half an hour's tugging and straining, the owner of the piano remarked: "At this rate it will take us hours to get this thing out!" "Out!" shouted the other, who was perspiring profusely. "Why didn't you say you wanted it out? I've been trying to push it in!" Your fellow workers will appreciate your cooperation in preventing accidents.



Do Don't

—Use substantial large size hopper. This eliminates need for shoveling spilled grain and provides firm footing while opening truck tail gates.

—Place hands or clothing near moving and unguarded pulleys, belts or power shafts.



The wife of a mountaineer heard the clock strike 13 times. She woke with a start and nudged her husband. "Get up in a hurry, Jake. . . . It's later'n I ever knowed it to be."

It's later than you think when you are working under unsafe conditions.

Nemaha County, Nebr.—Employee was loading corn into truck from grain bin. As auger started to tip, he grabbed the lower end and suffered amputation of two fingers of the right hand.

Logan County, Ill.—Employee was holding extension auger while removing corn from bin. His trouser leg was caught, pulling his leg against the moving auger. He suffered three deep cuts on the right leg.

Nemaha County, Nebr.—While loading corn employee accidentally touched V-belt which pulled his hand into pulley, amputating right index finger at first joint.



Kearney County, Nebr.—Employee attempted to adjust auger height while motor was running. He lost his balance and grabbed V-belt, which drew his hand into pulley. All fingers were lacerated and the tip of his middle finger was cut off.

Merrick County, Nebr.—A private trucker suffered a severe injury to his foot when he stepped into a moving auger shaft while helping to open the tail gate of his truck. He is now suing the United States Government for damages.

PREVENTIVE MEASURES

1. Adequate guards should be constructed and placed around exposed parts of moving machinery, especially the entrance port of the auger.
2. Employees should not stand in or on the sides of the feed hopper while the auger is in motion.
3. Do not cross the feed hopper when climbing in or out of trucks.
4. Make certain that auger motor is properly placed at all times to prevent overbalancing and tipping of the auger shaft.
5. Always shutdown machines before making repairs, oiling, refueling, or changing location.
6. Caution truck drivers and other visitors to stay clear of machinery and work operations.



Don't

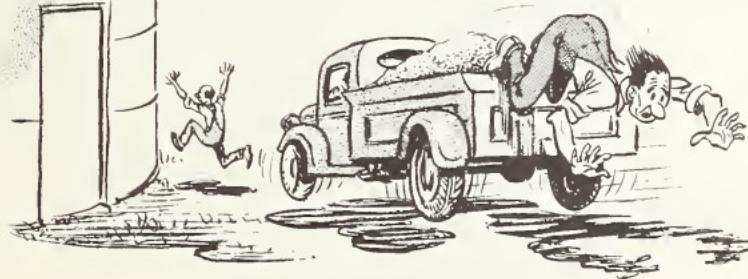
—Place feet or hands near end of moving auger shaft or remain in hopper while auger is in motion. If auger starts to tip or move "let her go." It is better to damage the equipment than lose several fingers or toes.

FALLS

More bin-site employees are injured by falls than in any other manner. Mostly they fall from ladders but sometimes from scaffolds, bin roofs, or trucks. Here is where taking a little time and effort to do the job safely will give especially good results.

The shape and size of most grain bins makes it easy for ladders to slip sideways. Therefore employees must be careful to properly place their ladders. The ladder should be set firmly before climbing to the top. If necessary, another employee should brace the bottom until the top rung can be lashed to the bin with a stout rope. (As this was written, the Grain Division was developing "ladder brackets" which would hold the ladders firmly in place.)

Work that requires employees to walk on bin roofs should be postponed in bad weather, such as rain, snow, or high winds.



CASE HISTORIES

Muscatine County, Iowa.—Employee was replacing hatch cover on top of grain bin while standing on ladder. Ladder slipped on smooth surface of bin throwing him 16 feet to the ground, face downward. While falling he grabbed for a brace which caught one finger and amputated it. He suffered severe internal injuries to the abdomen, liver, and spleen.

Cass County, Iowa.—Ladder was placed against sloping side of a quonset hut and employee was painting nail-heads. Ladder slipped and employee fell to the ground, suffering a compression fracture of the third vertebra. Doctor estimates employee will be disabled for several months.

Washington County, Nebr.—Employee was climbing into truck to help unload grain when he slipped and fell to the ground. He fractured the sixth vertebra and has considerable weakness in the left hand. Disability is estimated at several months.



Don't

—Perch in precarious places. Falls are the biggest single source of accidents to bin site employees.



The battleship was in port, and visitors were being shown around. The guide pointed to a bronze tablet on the deck and said, "That's where our brave captain fell."

An old lady frowned and spoke up, "Well, I don't wonder, I nearly tripped on the thing myself." Good housekeeping helps prevent accidents.

Don't

—Crowd your work operation—a worker may stumble and fall into moving machinery or under truck. Notice power cord under truck and splice on side rail of ladder.



PREVENTIVE MEASURES

1. Always use a sound ladder of proper size and place it on a firm foundation.
2. Face ladder and hold on with both hands while ascending or descending.
3. Secure ladder at top with a rope or other device if possible.
4. Hoist tools and materials with a rope and bucket or similar arrangement.
5. Work facing the ladder and holding on with one hand. Never over-reach; take time to move the ladder.
6. Always place the ladder so that the horizontal distance from the ladder base to the bin is approximately one-fourth of the vertical height from the ground level to the point where the ladder rests against the bin.
7. Do not jump from one bin roof to another.



ELECTRICAL HAZARDS

Contrary to what some people think, a very small current of electricity can kill a person. A man whose skin is wet from perspiration or rain provides little resistance to the flow of current, thus increasing the amperage that can flow through his body. This is especially true when he is in contact with a metal grain bin which provides an excellent ground.

As little as $\frac{1}{10}$ ampere of current is usually more than enough to kill. Amperage is determined by the formula: $\text{Amperes} = \frac{\text{Volts}}{\text{Ohms}}$. A man whose skin is damp or wet may only offer a few hundred ohms of resistance. If his resistance is as high as 1,000 ohms and he becomes a part of an ordinary 110-volt lighting circuit he would receive just over $\frac{1}{10}$ ampere of current.



Driving in a dense fog, a motorist followed the tail light ahead till it suddenly came to a halt and he crashed into the other car.

"Hey, why don't you signal when you're going to stop?" he yelled at the driver ahead.

"Why should I?" came the reply. "I'm in my own garage!"

Accidents can happen anywhere anytime.

CASE HISTORIES

Bin-site employees of McLean County, Ill., and Weld County, Colo., were severely shocked and burned while probing corn. In each case they were standing on top of a bin when the probe came in contact with an overhead high-voltage line. One of the employees has been disabled for over 1½ years and the other for 5 months.

Saunders County, Nebr.—Employee was working inside a quonset hut partially filled with corn. The flow of corn from the electric-powered grain auger was being guided by the employee who held a No. 9 wire in his hand, the other end of which was attached to the auger spout. A ground wire on the electric outlet box had become loose. When the employee touched the metal side of the quonset

hut, he became a part of the electric circuit and was severely shocked. He suffered a fracture of the head of the left humerus and lacerations on two fingers of the left hand. He was still recuperating 4½ months later. Hospital and doctor bills will total several hundred dollars.

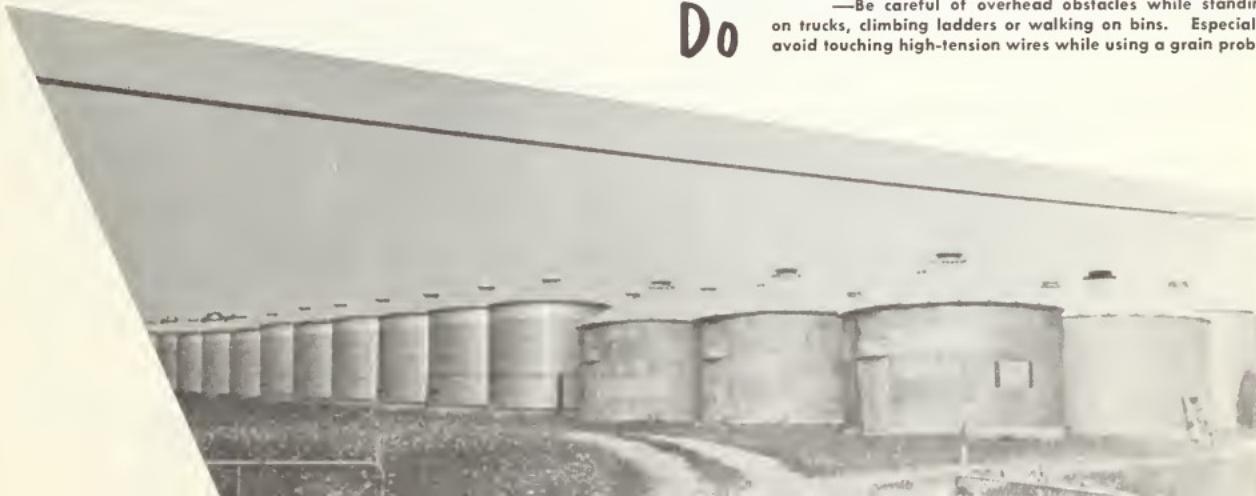
PREVENTIVE MEASURES

1. All electrical equipment and materials should be periodically checked for loose connections, frayed wires, or defective parts.
2. Electrical repairs should be performed by a competent electrician.

3. Rope or some other poor conductor of electricity should be used in guiding auger spout.
4. Avoid touching metal grain bins while handling electrical equipment.
5. Ground all electrical equipment, including small hand tools and gathering augers.
6. Grain bins shall not be located within 25 feet of an overhead high-voltage line. Bins so located shall be moved.

Do

—Be careful of overhead obstacles while standing on trucks, climbing ladders or walking on bins. Especially avoid touching high-tension wires while using a grain probe.



FUMIGATION OF GRAIN

Most grain fumigant mixtures are highly poisonous to human beings when inhaled to excess or absorbed through the skin. One bin site employee was killed and several have been seriously injured while using the ordinary fumigant mixtures, such as 80 percent carbon tetrachloride - 20 percent carbon bisulfide.

CASE HISTORIES

Jasper County, Iowa.—While fumigating empty bins with a sprinkling can, fumigant leaked into the shoes of the employee. He suffered a second-degree burn of his left foot and was off work for 5 days.

Otoe County, Nebr.—While fumigating grain, employee was overcome by gas fumes due to a defective gas mask. He fell 16 feet from the top of one of the bins and was knocked unconscious. His ear drum was broken and he was very ill from the gas. He lost 41 days time.

Pierce County, Nebr.—While fumigating corn, employee was overcome when gas mask sprung a leak. He suffered from general weakness, cramps, and secondary anemia. Length of disability was 1 week.

The following is an excerpt from a letter received from the Illinois ASC State Office.

"Our foreman spent some little time explaining to this man the method he should follow in detecting

Short cuts are often long chances.

He didn't take time to change his filter canister.



whether or not the canister in the gas mask was functioning properly and whether or not the canister should be changed. This man was operating a spray nozzle during the afternoon of his first day's training. The training foreman felt it was time for him to change the canister and indicated this fact. The individual assured the training foreman the canister and mask were working properly and since they only had a few minutes work yet to complete, it was not necessary to change the canister. About 10 minutes after the above discussion, the day's work was completed. The man came to the ground, removed his mask, and immediately became bilious.

Within a very few minutes the training foreman had the individual on the way to the hospital, and by the time he arrived there he was a very sick man. He remained in the hospital for several days, and under the care of a physician for a considerable period of time after returning home. In fact, this man almost lost his life, and for about 48 hours everyone in our organization who had any responsibility with reference to such operations was terribly fearful that he would lose his life."



PREVENTIVE MEASURES

1. Always wear gas masks while fumigating.
2. Check carefully for leaks.
3. Change filter canister after each $\frac{1}{2}$ hour of use.
4. Wear adequate protective clothing.
5. Stay out of bins except in emergencies.

DEFENSIVE DRIVING

Let's accept as a fact that we are all good drivers and that any accidents we have had or may have in the future were the other fellow's fault. We know who causes the accidents and we also know that some of us who read these words will be seriously injured by motor-vehicle accidents during the next year. In fact, it's almost a certainty that one or more of us will be killed. What can you do to increase your chances of survival? You can drive defensively.

Defensive driving means driving as if every other driver on the road were completely incompetent,

therefore, anything can happen. In short, defensive driving means driving safely yourself and allowing plenty of leeway for the unsafe acts of other drivers.

CASE HISTORY

A county bin-site employee in Iowa attempted to turn left into the bin-site entrance. His car was struck by a car coming from the opposite direction at approximately 30 miles per hour. Several people were seriously injured and the two vehicles were badly damaged.

Especially watch for these characters

The Wildcat



A SPEEDER WHO HATES EVERYONE
ON THE ROAD

The Wolf



HE'S LOOKING AT EVERYTHING
BUT THE ROAD

The Goose



HE JUST HONKS
SAVING HIS BRAINS

The Roadhog



HE DRIVES SLOWLY
DOWN THE MIDDLE

The Jackass



THIS COULD BE ANYONE
BUT YOU OR ME



The GAMBLER

He was the envy of the race-track gentry. He was only 30, but he knew more about horses than any man twice his age.

His mind was a veritable encyclopedia of facts about every important race horse—blood lines, performance in previous races, etc. He knew the jockeys' records.

In short, he knew when to place his bets—when the odds were right and he stood the best chance to win the most money at the least risk.

After a successful day at the track, this man who knew all the odds got into his car to drive back to town. Traffic was moving along on the 2-lane road at a respectable 50-miles-an-hour clip. But that was too slow for him. At 60, he figured he could save 5 minutes' travel time. So he gunned up to 60 and

started passing. He saw the car approaching from the opposite direction too late.

They gave him a nice funeral.

One of his old track pals figured the odds he took when he pulled out of line at 60: "Thirty years old, with maybe 40 years to go. That's 40 multiplied by 365 days a year, with 366 for leap year, makes 14,610 days, times 24 hours a day makes 350,640 hours, times 60 minutes each hour makes 21,038,400 minutes. He tried to save 5 minutes. The odds? 21,038,400 to 5. Whatta dope!"

Each bin-site employee should figure his own odds before he gambles with safety.

Do

—Drive defensively and be extremely careful at the bin-site entrance. Enter at a slow speed, giving hand signals at least 100 yards before your turn. When leaving make sure traffic is clear in both directions.



CUTS

Cuts frequently occur to bin-site employees but are usually not as serious as other injuries, especially when first aid or medical attention is obtained promptly. It is a good policy for each bin-site supervisor to learn first-aid methods and to have first-aid materials available for treating minor injuries. First-aid kits and refills can be ordered from the Federal Supply Centers at Government schedule prices. Direct your inquiries to the State Office. Where the volume of work will not justify the cost of a complete kit, several sizes of adhesive bandages and a good antiseptic should be purchased locally.



CASE HISTORIES

Pocahontas County, Iowa.—Employee was entering roof hatch of an incompletely built bin when he caught his arm on a piece of sharp metal. He suffered a laceration requiring five stitches.

Kossuth County, Iowa.—Employee was cutting a hole in a quonset hut for an air duct when his hand slipped and was cut on a jagged piece of tin. Blood poisoning later developed in the right hand and forearm.

Sangamon County, Ill.—Employee was helping lay sections of a bin floor. One section with a sharp edge slipped from his hand. It slid across his left thumb causing a laceration that required five stitches.

PREVENTIVE MEASURES

1. Wear heavy leather gloves when handling materials with sharp edges.
2. Inspect all completed bins and wherever possible remove or cover sharp metal edges.
3. Use extreme caution while working around incompletely built bins—cover sharp edges temporarily if possible.
4. Remove all metal trimmings and waste from the bin site.

Do

—Learn the hazards of each piece of equipment before you use it.



This crank raises or lowers the elevator and the crank shaft is not equipped with an automatic stop. If the handle slips from the operator's hand, it may spin and break his arm or the elevator may fall on another person.



The shaft of this auger is easily dislodged from the small wheel at the top of the V-yoke. One employee was killed when the shaft fell while he was pushing on one of the ground wheels.



Don't

—Lift with your back. Bend your legs and push straight up, keeping the back as nearly vertical as possible. This decreases the possibility of hernias and back strains.



DON'T TRUST YOUR LUCK
AROUND DANGEROUS EQUIPMENT





Do

—Keep bins and bin sites in good shape—cut weeds regularly—maintain fences and gates—inspect bins and foundations for deterioration—make repairs promptly. Good housekeeping decreases accidents, helps control rodents and prevents insect infestation.

Injuries to Private Persons . . .

In case a private trucker or visitor to the bin site is injured, furnish a complete report to the county office manager immediately. In no case should a signed statement be given to such injured persons or their attorneys unless approval has been received from the ASC State Office.

It's Much Easier to Avoid an Accident Than To Report One . . .

but when an accident does occur be sure to report it promptly to your County Office Manager. Report all accidents, even those where no time is lost, so the employee will be protected against possible future complications. The County Office Manager will furnish the injured person and bin-site supervisor with the forms required to establish a claim for benefits. These forms must be submitted promptly to the ASC State Office for mailing to Washington.

It is very important that all accidents be promptly investigated and described in full detail on Standard Form No. 92, "Supervisor's Report of Accident." This form helps the State and Washington offices determine the causes of accidents and prescribe methods for preventing future accidents of the same kind. The causes of accidents should be accurately shown even when employees were at fault. An inaccurate or incomplete report is of no value and may delay the approval of an injury claim. **AN EMPLOYEE'S CLAIM FOR BENEFITS WILL NOT BE DENIED SOLELY BECAUSE HE WAS RESPONSIBLE FOR THE ACCIDENT.**

**REMEMBER,
THERE'S ALWAYS A SAFE WAY!**



SAFETY CERTIFICATION

Each employee working at bin sites is required to carefully read this publication and to observe the precautions listed in performing his daily work. The bin-site supervisor is required to point out other work hazards and personally instruct each employee in the safe use of ladders, hand tools, fumigating equip-

ment, and power equipment before he starts to work.

As the above requirements are complied with, each employee will certify to that fact by signing his name and the date on one of the following lines. The supervisor will also certify by signing his name and date beside that of the employee.

Signature of employee

Date

Signature of supervisor

Date



Here is how last year's Bin Injured looked after suffering almost 400 injuries during approximately 300 working days.



Here is the infant Bin Injured who was entrusted to our care for this year. How will he look on December 31—Will we keep him hale and hearty or will we let him fall from ladders, get caught in augers, be overcome by fumigants, wreck his automobile, or electrocute himself? We will all benefit by his good health, both financially and in the more efficient accomplishment of our work.

LET'S "BE SAFE FOR BIN'S SAKE"